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Arnold Schwarzenegger
Governor

ORDER NO. R3-2007-0040
NPDES NO. CA0050016

WASTE DISCHARGE REQUIREMENTS FOR THE OCEAN VIEW COMMUNITY SERVICES DISTRICT OCEAN VIEW PLAZA DESALINATION FACILITY

Table 1. Discharger Information

Discharger	Ocean View Community Services District
Name of Facility	Ocean View Plaza Desalination Facility
Facility Address	470 Cannery Row
	Monterey, CA 93940
	Monterey County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

Discharges by the Ocean View Community Services District from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Reverse Osmosis Brine	36° 36' 55.8" N	121° 53' 41.0" W	Pacific Ocean

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	July 6, 2007
This Order shall become effective on:	August 25, 2007
This Order shall expire on:	August 25, 2012
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<u>180 days prior to the Order expiration date</u>

IT IS HEREBY ORDERED, that in order to meet the provisions contained in division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Roger Briggs Executive Officer, do hereby certify that this Order, with all attachments, is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coastal Region, on July 6, 2007.

Roger W. Briggs, Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
REGION 3, CENTRAL COAST REGION**

ORDER NO. RB3-2007-0040
NPDES NO. CA0050016

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I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order.

Table 4. Facility Information

Discharger	Ocean View Community Services District
Name of Facility	Ocean View Plaza Desalination Facility
Facility Address	470 Cannery Row
	Monterey, CA 93940
	Monterey County
Facility Contact, Title, and Phone	Phillip R. Taylor, Principal, (650) 614-9203
Mailing Address	535 Cowper Street, Second Floor, Palo Alto, CA 94301
Type of Facility	Desalination Plant
Facility Design Flow	0.116 Million Gallons per Day (MGD) (Maximum Discharge Rate)

II. FINDINGS

The California Regional Water Quality Control Board, Central Coast Region (the Regional Water Board), finds:

- A. Background.** The Ocean View Community Services District (hereinafter the Discharger) submitted a Report of Waste Discharge, dated September 28, 2006, and applied for a National Pollutant Discharge Elimination System (NPDES) permit authorization to discharge up to 0.116 MGD of reverse osmosis (RO) brine from the Ocean View Desalination Facility.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. Facility Description.** The Discharger owns and operates the Ocean View Desalination Facility from which RO brine is discharged from Discharge Point No. 001 (see table on cover page) to the Pacific Ocean, waters of the United States. Attachment B provides a map of the area around the facility, including the Hopkins Marine Life Refuge located approximately 0.5 miles northwest of the discharge. Attachment C provides a flow schematic of the facility.

The desalination system produces drinking-quality product water and includes pretreatment by ultra filtration (UF), desalination by reverse osmosis (RO), and chlorination capability.

Using 100-micron disc filters, UF removes suspended and colloidal matter from incoming seawater, thereby protecting downstream RO membranes from clogging by particulate matter and micro-organisms.

After pretreatment by UF, seawater passes through the RO desalination equipment, which produces a low salt, high quality product stream and concentrated or high salt reject stream (brine). Product water is chlorinated and pH adjusted to meet drinking water standards.

The UF system is periodically backwashed. The resultant backwash stream is treated, producing a high solids waste stream, which is discharged to the sanitary sewer, and a higher quality waste stream, which is discharged to the Ocean with the RO brine through Discharge Point 001.

From the desalination facility a 20-inch diameter, horizontally drilled tunnel extends approximately 330 feet northward into Monterey Bay. The tunnel holds three 6-inch diameter, high density polyethylene (HDPE) pipes – two that carry intake water to the desalination facility and one that carries effluent from the facility. The three pipes extend an additional 490 feet along the seafloor where the intake pipes terminate at a depth of approximately 40 feet. The discharge pipe extends still another 240 feet offshore and terminates at a depth of approximately 50 feet. The point of discharge is within the

Monterey Bay National Marine Sanctuary and is reported to be approximately 40 meters (131 feet) from the nearest kelp bed (Marine Resource Consultants, Inc., 2006).

The Permittee conducted an analysis of effluent mixing and dilution of effluent at the point of discharge using USEPA's *Plumes* model, version 1.01 (Marine Resource Consultants, Inc, 2006). More information regarding this conservative model can be found at the following link.

<http://www.epa.gov/ceampubl/swater/vplume/index.htm>

A worst-case modeled condition used an effluent flow rate of 45.8 gpm and an effluent salinity of 58.7 practical salinity units (psu). Under this worst-case scenario, the model estimated that the salinity of the brine effluent was reduced to less than 2 percent above the ambient salinity (33.5 psu) within a horizontal distance of 1.88 meters (6 feet) from the diffuser. This value represented a dilution factor of 37 to 1 (seawater to effluent) as calculated by the model. Based on this study, Regional Water Board staff has used this dilution factor to determine the need for water quality based effluent limitations for Discharge Point 001, and where necessary, to calculate those limitations.

- C. Legal Authorities.** This Order is issued pursuant to CWA section 402 and implementing regulations adopted by the USEPA, and Chapter 5.5, Division 7 of the California Water Code (the Water Code). It shall serve as an NPDES permit for point source discharges from this facility to surface waters, and it shall serve as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through F, which contain background information and rationale for the requirements of the Order, are hereby incorporated into this Order and therefore constitute part of the Findings for this Order.
- E. California Environmental Quality Act (CEQA).** Pursuant to California Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21000-21177.
- F. Technology-Based Effluent Limitations.** CWA section 301 (b) and USEPA implementing regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines (ELGs) and Standards for industrial categories listed in 40 CFR Parts 402 through 699, and based on best professional judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of development of technology-based effluent limitations is included in the Fact Sheet (Attachment F).

G. Water Quality-Based Effluent Limitations. CWA 301 (b) and NPDES regulations at 40 CFR 122.44 (d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

NPDES regulations at 40 CFR Section 122.44 (d) (1) (i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304 (a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, pursuant to NPDES regulations at 40 CFR 122.44 (d) (1) (vi).

H. Water Quality Control Plans. The Regional Water Board has adopted a Water Quality Control Plan for the Central Coast Region (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of very high levels of total dissolved solids (TDS) in the Pacific Ocean, the receiving water meets an exception to Resolution No. 88-63, which precludes waters with TDS levels greater than 3,000 mg/L from the MUN designation.

I. California Ocean Plan. The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005, and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. The Ocean Plan identifies the following beneficial uses of ocean waters of the State.

Table 5. Receiving Water Beneficial Uses Established by the Ocean Plan

Discharge Point	Receiving Water	Beneficial Uses
001	Pacific Ocean	<ul style="list-style-type: none"> • Water Contact and Non-Contact Recreation, including Aesthetic Enjoyment • Navigation • Commercial and Sport Fishing • Rare and Endangered Species • Marine Habitat • Shellfish Harvesting • Mariculture • Fish Migration

		<ul style="list-style-type: none"> • Fish Spawning • Preservation of Designated Areas of Special Biological Significance
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In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

J. Alaska Rule. On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. [65 Fed. Reg. 24641 (April 27, 2000), codified at 40 CFR 131.21] Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000 must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

K. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on total suspended solids (TSS), settleable solids, oil and grease, turbidity, and pH for Discharge Point 001.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. For Discharge Point 001, procedures for calculating individual WQBELs are based on the Ocean Plan, which was approved by USEPA on February 14, 2006. All beneficial uses and water quality objectives contained in the Ocean Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to NPDES regulations at 40 CFR 131.21 (c) (1).

Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

L. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

- M. Anti-Backsliding Requirements.** CWA sections 402 (o) (2) and 303 (d) (4) and NPDES regulations at 40 CFR 122.44 (l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. The requirements of this Order are not subject to anti-backsliding requirements since this is a new permit.
- N. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 - 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 - 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of the State and federal acts pertaining to endangered species.
- O. Monitoring and Reporting.** NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting of monitoring results. California Water Code sections 13267 and 13383 authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Plan (MRP), which is provided as Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and State requirements.
- P. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES discharges pursuant to NPDES regulations at 40 CFR 122.41 - 122.42, and which must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).
- Q. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV. B, IV. C, V. B, and VI. C of this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- R. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public hearing are provided in the Fact Sheet of this Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge to Monterey Bay at a location other than as described by this Order at 36° 36' 55.8" N. Latitude, 121° 53' 41.0" W. Longitude is prohibited.
- B.** Discharges of any waste or discharges in any manner other than as described by this Order, excluding storm water regulated by General Permit No. CAS000001 (Waste

Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities), are prohibited.

- C. Discharges to Monterey Bay shall not exceed a maximum daily discharge rate of 0.116 MGD and shall contain no waste streams other than reverse osmosis brine/concentrate and treated ultra filtration backwash water as described in section II. B of this Order.
- D. The discharge of any radiological, chemical, or biological warfare agent or high level radioactive waste to the Ocean is prohibited.
- E. Federal law prohibits the discharge of sludge by pipeline to the Ocean. The discharge of municipal or industrial waste sludge directly to the Ocean or into a waste stream that discharges to the Ocean is prohibited. The discharge of sludge digester supernatant, without further treatment, directly to the Ocean or to a waste stream that discharges to the Ocean, is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

- a. The Discharger shall maintain compliance with the following effluent limitations at the Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

Table 6. Effluent Limitations for Conventional Pollutants

Parameter	Units	Monthly 30-Day Average	Weekly 7-Day Average	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75
Settleable Solids	mL/L	1.0	1.5	3.0
TSS	mg/L	60 ¹	---	---
Turbidity	NTU	75	100	225
pH	s.u.	Within 6.0 to 9.0 at all times		

¹ Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units ²	Effluent Limitations		
		6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	µg/L	190	1,100	2,900
	lbs/day	0.19	1.1	2.9
Cadmium	µg/L	38	150	380
	lbs/day	0.038	0.15	0.38
Chromium ¹	µg/L	76	300	760
	lbs/day	0.076	0.30	0.76

Parameter	Units ²	Effluent Limitations		
		6-Month Median	Daily Maximum	Instantaneous Maximum
Copper	µg/L	40	382	1,100
	lbs/day	0.040	0.38	1.1
Lead	µg/L	76	304	760
	lbs/day	0.076	0.30	0.76
Mercury	µg/L	1.3	5.9	15
	lbs/day	0.0013	0.0059	0.015
Nickel	µg/L	190	760	1,900
	lbs/day	0.19	0.76	1.9
Selenium	µg/L	570	2,300	5,700
	lbs/day	0.57	2.3	5.7
Silver	µg/L	21	100	260
	lbs/day	0.021	0.10	0.26
Zinc	µg/L	460	2,700	7,300
	lbs/day	0.46	2.7	7.3
Chronic Toxicity	TUc	--	38	--

¹ The water quality objective is for hexavalent chromium; however, the Discharger may at its option meet this objective as a total chromium objective.

² Mass emission limitations are based on a maximum flow of 0.12 MGD.

- b. **Minimum Initial Dilution:** The minimum initial dilution at the point of discharge to the Pacific Ocean shall not be less than 37 to 1 (seawater to effluent) at any time.

2. Interim Effluent Limitations

This section of the standardized permit template is not applicable to this discharge.

B. Land Discharge Specifications

This section of the standardized permit template is not applicable to this discharge.

C. Reclamation Specifications

This section of the standardized permit template is not applicable to this discharge.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The following receiving water limitations are based on water quality objectives contained in the Ocean Plan and are a required part of this Order. Discharges from the Ocean View Plaza Desalination Facility discharge, by itself or jointly with any other discharges, shall not cause violation of the following receiving water limitations.

Bacterial Characteristics

1. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Water Board, but including all kelp beds, the following bacterial objectives shall be maintained throughout the water column.

30-Day Geometric Mean. The following standards are based on the geometric mean of the five most recent samples from each site.

- Total coliform density shall not exceed 1,000 per 100 mL;
- Fecal coliform density shall not exceed 200 per 100 mL; and
- Enterococcus density shall not exceed 35 per 100 mL.

Single Sample Maximum.

- Total coliform density shall not exceed 10,000 per 100 mL;
 - Fecal coliform density shall not exceed 400 per 100 mL; and
 - Enterococcus density shall not exceed 104 per 100 mL.
2. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the following bacterial objectives shall be maintained throughout the water column.
 - Median total coliform density shall not exceed 70 per 100 mL, and
 - Total coliform density shall not exceed 230 per 100 mL in more than 10 percent of all samples.

Physical Characteristics

3. Floating particulates and grease and oil shall not be visible.
4. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
5. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

6. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

Chemical Characteristics

7. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.
8. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
9. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
10. The concentration of substances set forth in Chapter II, Table B of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.
11. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
12. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.
13. Numerical water quality objectives established in Chapter II, Table B of the California Ocean Plan (2005) shall not be exceeded outside of the zone of initial dilution as a result of discharges from the facility.

Biological Characteristics

14. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.
15. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
16. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

Radioactivity

17. Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations

This section of the standardized permit template is not applicable to the Ocean View Plaza Desalination Facility.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions:
 - a. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of an inland watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change (California Water Code section 1211.).

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program (MRP), and future revisions thereto, in Attachment E of this Order. All monitoring shall be conducted according to 40 CFR Part 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*.

C. Special Provisions

1. Reopener Provisions

- a. This permit may be reopened and modified in accordance with NPDES regulations at 40 CFR 122 and 124, as necessary, to include additional conditions or limitations based on newly available information or to implement any U.S. EPA approved, new, State water quality objective.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

If the discharge consistently exceeds an effluent limitation for toxicity specified by Section IV of this Order, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) in accordance with the Discharger's TRE Workplan.

A TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE. A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases – characterization, identification, and confirmation using aquatic organism toxicity tests. The TRE

shall include all reasonable steps to identify the source of toxicity. The Discharger shall take all reasonable steps to reduce toxicity to the required level once the source of toxicity is identified.

The Discharger shall maintain a TRE Workplan which describes steps that the Discharger intends to follow in the event that a toxicity effluent limitation established by this Order is exceeded in the discharge. The Workplan shall be prepared in accordance with current technical guidance and reference material, including EPA/600/2-88-070 (for industrial discharges) or EPA/600/2-88/062 (for municipal discharges), and shall include, at a minimum:

- Actions that will be taken to investigate/identify the causes/sources of toxicity,
- Actions that will be evaluated to mitigate the impact of the discharge, to correct the non-compliance, and/or to prevent the recurrence of acute or chronic toxicity (this list of action steps may be expanded, if a TRE is undertaken), and
- A schedule under which these actions will be implemented.

When monitoring measures toxicity in the effluent above a limitation established by this Order, the Discharger shall resample immediately, if the discharge is continuing, and retest for whole effluent toxicity. Results of an initial failed test and results subsequent monitoring shall be reported to the Executive Officer (EO) as soon as possible following receipt of monitoring results. The EO will determine whether to initiate enforcement action, whether to require the Discharger to implement a TRE, or to implement other measures. The Discharger shall conduct a TRE giving due consideration to guidance provided by the U.S. EPA's Toxicity Reduction Procedures, Phases 1, 2, and 3 (EPA document nos. EPA 600/3-88/034, 600/3-88/035, and 600/3-88/036, respectively). A TRE, if necessary, shall be conducted in accordance with the following schedule:

Table 8. Toxicity Reduction Evaluation Schedule

Action Step	When Required
Take all reasonable measures necessary to immediately reduce toxicity, where the source is known.	Within 24 hours of identification of noncompliance.
Initiate TRE in accordance with Workplan.	Within 7 days of notification by EO.
Conduct the TRE following the procedures in the Workplan.	Within the period specified in the Workplan (not to exceed one year, without an approved Workplan).
Submit the results of the TRE, including summary of findings, required corrective action, and all results and data.	Within 60 days of completion of the TRE.
Implement corrective actions to meet Permit limits and conditions.	To be determined by the EO.

3. Best Management Practices and Pollution Prevention

This section of the standardized permit template is not applicable to the Ocean View Plaza Desalination Facility.

4. Construction, Operation and Maintenance Specification

This section of the standardized permit template is not applicable to the Ocean View Plaza Desalination Facility.

5. Special Provisions for Municipal Facilities (POTWs Only)

This section of the standardized permit template is not applicable to the Ocean View Plaza Desalination Facility.

6. Other Special Provisions

- a. **Discharges of Storm Water.** For the control of storm water discharged from the site of the desalination facility, if applicable, the Discharger shall seek authorization to discharge under and meet the requirements of the State Water Resources Control Board's NPDES General Permit No. CAS000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*.

7. Compliance Schedules

This section of the standardized permit template is not applicable to the Ocean View Plaza Desalination Facility.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. General.

Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

B. Multiple Sample Data.

When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected"

(ND), the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

ATTACHMENT A – DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

Acute Toxicity:

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{\frac{96\text{-hr LC}}{50\%}}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Ocean Plan Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log(100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

Areas of Special Biological Significance (ASBS): are those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix II.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Degrade: Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

Detected, but Not Quantified (DNQ) are those sample results less than the reported Minimum Level, but greater than or equal to the laboratory's MDL.

Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Downstream Ocean Waters shall mean waters downstream with respect to ocean currents.

Dredged Material: Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoils".

Enclosed Bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Initial Dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Kelp Beds, for purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Mariculture is the culture of plants and animals in marine waters independent of any pollution source.

Material: (a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

MDL (Method Detection Limit) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, PART 136, Appendix B.

Minimum Level (ML) is the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes and processing steps have been followed.

Natural Light: Reduction of natural light may be determined by the Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the state as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the state could affect the quality of the waters of the state, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-

benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of Ocean Plan Table B pollutants through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Reported Minimum Level is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the reported ML.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Shellfish are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-month Median Effluent Limitation: the highest allowable moving median of all daily discharges for any 180-day period.

State Water Quality Protection Areas (SWQPAs) are non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE

(ASBS) that were previously designated by the State Water Board in Resolution No.s 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

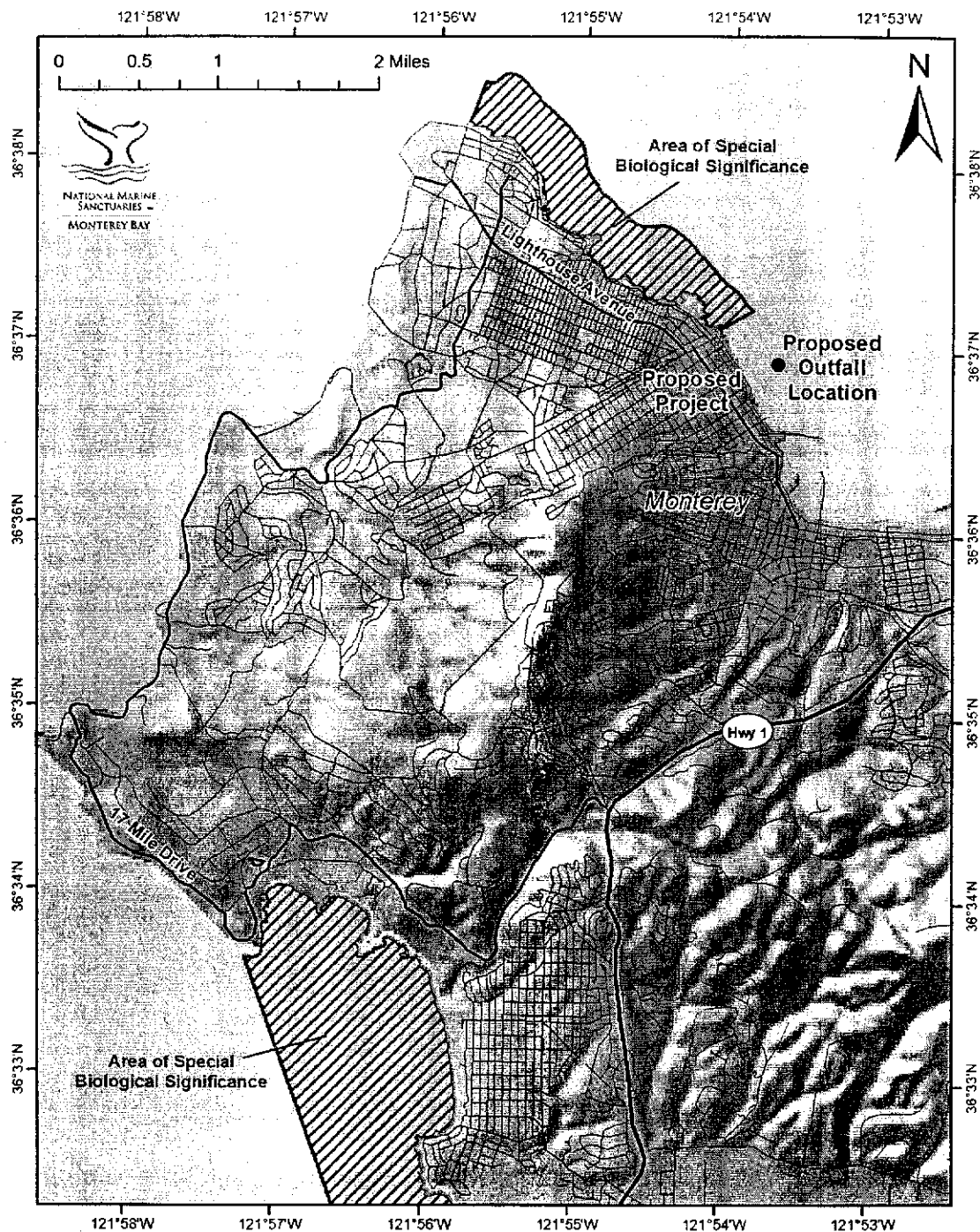
Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A TOXICITY IDENTIFICATION EVALUATION (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste: As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

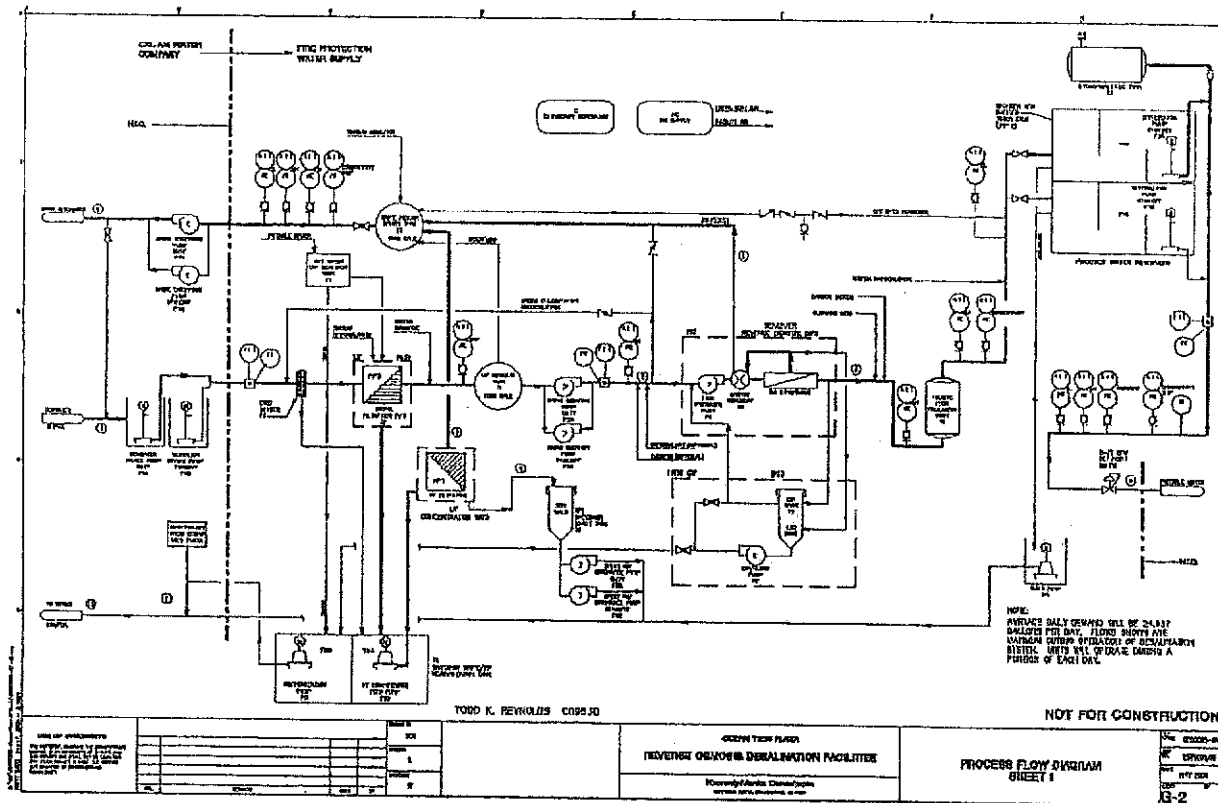
Water Reclamation: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

ATTACHMENT B – TOPOGRAPHIC MAP



ATTACHMENT C – FLOW SCHEMATIC

Process Flow Diagram



ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the CWA and the CWC and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].
3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:

- a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
 - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR §122.41(b)].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].
- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].

C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:

1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].
2. All permit applications shall be signed as follows:
 - a. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR §122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in paragraph (2.) of this provision [40 CFR §122.22(b)(1)];
 - b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
 - c. The written authorization is submitted to the Regional Water Board, State Water Board, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under Standard Provisions – Reporting V.B.3. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, State Water Board or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted

is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations" [40 CFR §122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the MRP in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].

- b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR §122.41(l)(6)(ii)(C)].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR §122.41(l)(6)(iii)].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 CFR §122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [40 CFR §122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [40 CFR §122.41(l)(1)(iii)].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 CFR §122.41(l)(2)].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [40 CFR §122.41(l)(7)].

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the

Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 *CFR* §122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [40 *CFR* §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [40 *CFR* §122.42(b)(1)]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [40 *CFR* §122.42(b)(2)].
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [40 *CFR* §122.42(b)(3)].

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with Water Code section 13176, and must include quality assurance/quality control data with their reports.
- B. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and approval of the Regional Board.
- C. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references:
 - 1. A Guide to Methods and Standards for the Measurement of Water Flow, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421)
 - 2. Water Measurement Manual, U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027).
 - 3. Flow Measurement in Open Channels and Closed Conduits, U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
 - 4. NPDES Compliance Sampling Manual, U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)

- D. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP.
- F. Unless otherwise specified by this MRP, all monitoring shall be conducted according to test procedures established at 40 CFR 135, *Guidelines Establishing Test Procedures for Analysis of Pollutants*. All analyses shall be conducted using the lowest practical quantification limit achievable using the specified methodology. Where effluent limitations are set below the lowest achievable quantitation limits, pollutants not detected at the lowest practical quantitation limits will be considered in compliance with effluent limitations. Analysis for toxics listed by the California Toxics Rule shall also adhere to guidance and requirements contained in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005). Analyses for toxics listed in Table B of the California Ocean Plan (2005) shall adhere to guidance and requirements contained in that document.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	At a point where an effluent sample, representative of discharges to the Pacific Ocean from the desalination facility, and before dilution occurs with seawater or other waste streams not authorized by this Order, can be collected.

III. INFLUENT MONITORING REQUIREMENTS

Because influent to the desalination facility is seawater, influent monitoring requirements are not established by the Order.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor reverse osmosis brine EFF-001 as follows.

Table E-2. Effluent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Average Daily Flow Rate	MGD	Measured	Daily

Parameter	Units	Sample Type	Minimum Sampling Frequency
Peak Daily Flow Rate	GPM	Measured	Daily
Brine Average Daily Flow Rate	MGD	Measured	Daily
Brine Peak Daily Flow Rate	GPM	Measured	Daily
Oil and Grease	mg/L	Grab	1X / Year
Settleable Solids	mg/L	Grab	Quarterly
Total Suspended Solids (TSS)	mg/L	Grab	Quarterly
Turbidity	NTU	Grab	Quarterly
pH	Units	Grab	Quarterly
Chronic Toxicity ¹	TUc	Grab	2X / Year
Ocean Plan Table B Metals ^{2, 3}	µg/L	Grab	Quarterly ³
Ocean Plan Table B Pollutants ^{4, 5}	µg/L	Grab	1X / Permit Term

- ¹ Whole effluent chronic toxicity monitoring shall be conducted according to the requirements established in section V. of this Monitoring and Reporting Plan.
- ² The 10 metals with applicable water quality objectives established by Table B of the Ocean Plan (2005) – arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc.
- ³ Analysis shall occur quarterly for 2 years following adoption of the Order to provide characterization of the discharge. If mass-based and concentration-based limitations established by the Order are met during each of 8 monitoring events in that 2 year period, then the Executive Officer may relax the monitoring frequency for that metal to one time per year. If subsequent exceedances of limitations occur, quarterly monitoring shall be resumed.
- ⁴ Those inorganic and organic pollutants, excluding radioactivity, chlorine, and acute toxicity, with applicable water quality objectives established by Table B of the Ocean Plan (2005).
- ⁵ Analyses, compliance determination, and reporting for these pollutants shall adhere to applicable provisions of the Ocean Plan, including the Standard Monitoring Procedures presented in Appendix III of the Ocean Plan. The Discharger shall instruct its analytical laboratory to establish calibration standards so that the Minimum Levels (MLs) presented in Appendix II of the Ocean Plan are the lowest calibration standards. The Discharger and its analytical laboratory shall select MLs that are below applicable water quality criteria of Table B; and when applicable water quality criteria are below all MLs, the Discharger and its analytical laboratory shall select the lowest ML.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Chronic Toxicity

The presence of chronic toxicity shall be estimated as specified in *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-821/600/R-95/136; *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, EPA-600-4-91-003; *Procedures Manual for Conducting Toxicity Tests developed by the Marine Bioassay Project*, SWRCB 1996, 96-1WQ; and/or *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, EPA/600/4-87-028 or subsequent editions.

Chronic toxicity measures a sub lethal effect (e.g., reduced growth or reproduction) to experimental test organisms exposed to an effluent compared to that of the control

organisms. The no observed effect concentration (NOEC) is the maximum tested concentration in a medium which does not cause known adverse effects upon chronic exposure in the species in question (i.e. the highest effluent concentration to which organisms are exposed in a chronic test that causes no observable adverse effects on the test organisms; (e.g., the highest concentration of a toxicant to which the values for the observed responses are not statistically significantly different from the controls). Examples of chronic toxicity include but are not limited to measurements of toxicant effects on reproduction, growth, and sublethal effects that can include behavioral, physiological, and biochemical effects. Test results shall be reported in chronic toxicity units (TUc), where $TUc = 100/NOEC$. For this discharge, the presence of chronic toxicity at more than 2.75 TUc shall trigger the TRE requirements of the Order.

If the effluent is to be discharged to a marine or estuarine system (e.g., salinity values in excess of 1,000 mg/L) originates from a freshwater supply, salinity of the effluent must be increased with dry ocean salts (e.g., FORTY FATHOMS®) to match salinity of the receiving water. This modified effluent shall then be tested using marine species.

Test species shall include a vertebrate, an invertebrate, and an aquatic plant. After a screening period, monitoring may be reduced to the most sensitive species. Screening phase chronic toxicity monitoring shall be conducted with approved test protocols and species shown in Tables E-3, below.

Table E-3. Approved Tests – Chronic Toxicity

Species	Test	Tier ¹	Reference ²
Giant Kelp, <i>Macrocystis pyrifera</i>	percent germination; germ tube length	1	a, c
Red abalone, <i>Haliotis rufescens</i>	abnormal shell development	1	a, c
Oyster, <i>Crassostrea gigas</i> ; mussels, <i>Mytilus spp.</i>	abnormal sell development; percent survival	1	a, c
Urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	percent normal development; percent fertilization	1	a, c
Shrimp, <i>Homesimysis costata</i>	percent survival; growth	1	a, c
Shrimp, <i>Menidia beryllina</i>	percent survival; fecundity	2	b, d
Topsmelt, <i>Atherinops affinis</i>	larval growth rate; percent survival	1	a, c
Silverside, <i>Menidia beryllina</i>	larval growth rate; percent survival	2	b, d

¹ First tier methods are preferred for compliance monitoring. If first tier organisms are not available, the Discharger can use a second tier test method following approval by the Regional Water Board

² Protocol References:

- a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. EPA Report No. EPA/600/R-95/136
- b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms. U.S. EPA Report No. EPA-600-4-91-003.
- c. SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.
- d. Webber, C.I., W.B. Horning II, D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler (eds). 1998. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA/600/4-87/028.

Authorized dischargers shall conduct toxicity tests using effluent dilutions of 100%, 85%, 70%, 50%, and 25%. Dilution and control waters shall be obtained from an area of the receiving waters, typically upstream, which is unaffected by the discharge. Standard dilution water can be used, if the receiving water itself exhibits toxicity or if approved by the Regional Water Board. If the dilution water used in testing is different from the water in which the test organisms were cultured, a second control sample using culture water shall be tested.

The sensitivity of test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results.

B. Toxicity Reporting

- 1, The Discharger shall include a full report of toxicity test results with the regular monthly monitoring report and include the following information.
 - a. toxicity test results,
 - b. dates of sample collection and initiation of each toxicity test,
 - c. and/or chronic toxicity discharge limitations (or value).
2. Toxicity test results shall be reported according to the appropriate guidance - *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, U.S. EPA Office of Water, EPA-821-R-02-012 (2002) or the latest edition, or, EPA-821-R-02-012 (2002) or subsequent editions.
3. If the initial investigation TRE workplan is used to determine that additional (accelerated) toxicity testing is unnecessary, these results shall be submitted with the monitoring report for the month in which investigations conducted under the TRE workplan occurred.
4. Within 14 days of receipt of test results exceeding the chronic toxicity discharge limitation, the Discharger shall provide written notification to the Executive Officer of:
 - a. Findings of the TRE or other investigation to identify the cause(s) of toxicity,
 - b. Actions the Discharger has taken/will take, to mitigate the impact of the discharge and to prevent the recurrence of toxicity. When corrective actions, including TRE, have not been completed, a schedule under which corrective actions will be implemented, or the reason for not taking corrective action, if no action has been taken.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

This section of the standardized permit form is not applicable.

VII. RECLAMATION MONITORING REQUIREMENTS

This section of the standardized permit form is not applicable.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

The Discharger shall monitor bottom salinity at various distances (e.g., 2 m, 6m, and 10 m) upstream and downstream (approximately 135 and 315) from the diffuser system on at least a quarterly basis for at least the first year. The Discharger shall monitor the abundance and distribution of benthic macroinvertebrates in sandy habitat at various distances (e.g. 1 m, 5 m, and 10 m) from the diffuser system on at least a quarterly basis for at least the first year. The Discharger shall also monitor benthic macroinvertebrate and algal abundance within the kelp forest nearest to the discharge during the same time period. After one year of operation the Discharger shall collect vibracores and perform sediment chemistry analysis on these cores. After one year of operation the Discharger shall also perform an infauna study in the vicinity of the discharge location. Methods employed in the vibracore and infauna study shall utilize methods employed in the June 2001 baseline study described in the Final Environmental Impact Report. After the first year, the Executive Officer may amended these monitoring requirements.

IX. OTHER MONITORING REQUIREMENTS

This section of the standardized permit form is not applicable.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. If there is no discharge during any reporting period, the report shall so state.
3. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.
4. The Discharger shall inform the Regional Water Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements
5. The Discharger shall report the results of chronic toxicity testing, TRE and TIE as required in the Attachment E, Monitoring and Reporting, Section V.G.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Website will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutants more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-4. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	August 25, 2007	All	Submit with monthly SMR
Daily	August 25, 2007	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	Submit with monthly SMR
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	Submit with next monthly SMR
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	Submit with monthly SMR
Annually	January 1 following (or on) permit effective date	January 1 through December 31	Submit with Annual Report

4. The Discharger shall report with each sample result the applicable Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.
 - a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

- b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Qualified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to the DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is a differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Discharger shall submit SMRs in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned, and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401
1. An Annual Self Monitoring Report shall be due on February 1 following each calendar year and shall include:
- All data required by this MRP for the corresponding monitoring period, including appropriate calculations to verify compliance with effluent limitations.

- A discussion of any incident of non-compliance and corrective actions taken.

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below.

Standard Mail

State Water Resources Control Board
Division of Water Quality
c/o DMR Processing Center
PO Box 100
Sacramento, CA 95812-1000

Fed Ex / UPS / Other Private Carrier

State Water Resources Control Board
Division of Water Quality
c/o DMR Processing Center
1001 I Street, 15th Floor
Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of EPA Form 3320-1.

D. Other Reports

1. The Discharger shall report the results of any special monitoring, TREs, or other data or information that results from the Special Provisions, Section VI.C, of the Order. The Discharger shall submit such reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.
2. Notifications. The regulations for the Monterey Bay National Marine Sanctuary at 15 CFR Part 922.132 prohibit discharges from within the boundaries of the MBNMS. Discharges occurring outside the MBNMS that subsequently enter and injure Sanctuary resources or qualities are similarly prohibited. In order to protect the health of the MBNMS, the permittee must immediately notify the MBNMS office at 888-902-2778 for any spills that are likely to enter ocean waters. In addition to facilitating potential enforcement investigations, the MBNMS seeks to track this information in order to evaluate existing and direct the implementation of new management measures. All correspondence shall be sent to the individual listed below:

**Permit Coordinator
Monterey Bay National Marine Sanctuary
299 Foam Street Monterey, CA 93940**

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	3 270307103
Discharger	Ocean View Community Services District
Name of Facility	Ocean View Plaza Desalination Facility
Facility Address	470 Cannery Row
	Monterey, CA 93940
	Monterey County
Facility Contact, Title and Phone	Phillip R. Taylor, Principal, (650) 614-9203
Authorized Person to Sign and Submit Reports	
Mailing Address	535 Cowper Street, Second Floor, Palo Alto, CA 94301
Billing Address	535 Cowper Street, Second Floor, Palo Alto, CA 94301
Type of Facility	Ocean Water Desalination Plant
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	NA
Reclamation Requirements	NA
Facility Permitted Flow	0.116 Million Gallons per Day (MGD)
Facility Design Flow	0.116 MGD (Maximum Discharge Rate)
Watershed	NA
Receiving Water	Pacific Ocean
Receiving Water Type	Pacific Ocean

- A. The Ocean View Community Services District (hereinafter the Discharger) is the owner and operator of Ocean View Plaza Desalination Facility, a desalination plant providing potable water to the Ocean View Community Services District.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The facility is a newly constructed desalination plant, which will provide potable water to the Community Services District and discharge wastewater to the Pacific Ocean, waters of the United States.

- C. The Discharger filed an Application for Waste Discharge Requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit on September 28, 2006.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Treatment or Controls

Ocean View Plaza (OVP) is a mixed-use, residential and commercial development with a projected potable water demand of approximately 25,000 gallons per day. The desalination facility is sized to meet the average daily demand during the maximum demand month, resulting in a design production capacity of 34.6 gallons per minute (operating 12 hours per day) or about 25,000 gpd.

The desalination system produces drinking-quality product water and includes pretreatment by ultra filtration (UF), desalination by reverse osmosis (RO), and chlorination capability.

Using 100-micron disc filters, UF removes suspended and colloidal matter from incoming seawater, thereby protecting downstream RO membranes from clogging by particulate matter and micro-organisms. Following treatment by a concentrator, the UF waste stream is discharged to the Ocean. The suspended solids which make up the more concentrated portion of this waste stream are discharged to the sanitary sewer.

After pretreatment by UF, seawater passes through the RO desalination equipment, which produces a low salt, high quality product stream and concentrated or high salt reject stream (brine). Product water is chlorinated and pH adjusted to meet drinking water standards. RO brine, along with treated UF waste stream, is discharged to the Ocean at Discharge Point 001 at a maximum rate of 80.7 gpd or 0.116 million gallons per day (mgd).

Water Code Section 13142.5(b) requires that "[f]or each new ... coastal powerplant or other industrial installation using seawater for ... industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life." Assuming desalination is "industrial processing," Water Board staff evaluated the potential effects of entrainment and impingement based on a volumetric approach that compared the Ocean View desalination project to previous studies at the Moss Landing Power Plant (MLPP). The proposed discharge (maximum flow 0.14 mgd or 97 gpm) would have flows about 5,300 times lower than the combined flows of the MLPP's two cooling water systems (approximately 750 MGD, assuming the facility operated at full capacity). Based on review of entrainment modeling studies (Fecundity Hind casting, Adult Equivalent Losses, and Empirical Transport Model) that incorporated the low flow of the Ocean View project, potential impingement and entrainment impacts will be negligible. For comparison to the maximum desalination flow of 97 gpm, the circulating pump on a standard small V8 GM based sterndrive engine will flow approximately 50 gpm of seawater through the engine for cooling.

In addition, the Discharger will incorporate additional design measures to minimize impingement. The intake will be constructed of a single-screen vertical riser that extends two to three feet above the ocean floor. The stainless steel screen will be designed with a mesh size less than 0.125 inches and will be fitted with a velocity cap that will reduce maximum intake velocity to 0.2 feet per second (fps). Although not applicable to this small desalination facility, for comparison, the impingement standard for new power plants that withdraw at least 2 mgd of cooling water is 0.5 fps. (40 CFR §125.84(c), (d).)

B. Discharge Points and Receiving Waters

The Discharger proposes to discharge up to 0.116 MGD of RO brine (also called concentrate or RO reject) from the desalination facility to Monterey Bay. Two 6-inch diameter high density polyethylene (HDPE) seawater intake pipes, and one HDPE 6-inch diameter brine discharge pipe will extend approximately 330-feet north (offshore into Monterey Bay) of the site within a 20-inch diameter horizontally drilled tunnel. The three pipes will extend an additional 490 feet along the seafloor where the two intake pipes will terminate at a depth of approximately 40 feet. The brine discharge pipe will extend an additional 240 feet offshore and terminate at a depth of approximately 50 feet.

The discharge location is within the Monterey Bay National Marine Sanctuary but is not within an Area of Special Biological Significance (ASBS). The discharge point is reported to be approximately 40 meters (131 feet) from nearest kelp bed and is approximately 0.5 miles from the Hopkins Marine Life Refuge ASBS.

The Permittee conducted an analysis of effluent mixing and dilution of effluent at the point of discharge using USEPA's *Plumes* model, version 1.01 (Marine Resource Consultants, Inc, 2006). More information regarding this conservative model can be found at the following link.

<http://www.epa.gov/ceampubl/swater/vplume/index.htm>

Ten ambient ocean discharge conditions ranging from worst to optimal case, based on ambient current speed and thermal stratification, were modeled using effluent discharge rates between 45.8 and 85.3 gallons per minute (gpm). Under all modeled conditions, the salinity of the brine effluent was reduced to less than 2 percent above the ambient salinity (33.5 practical salinity units [psu]) within a horizontal distance of 1.88 meters (6 feet) from the diffuser. Under normal operating conditions, with effluent flow rates of 85.3 gpm and an effluent salinity of 47.1 psu, the effluent salinity reaches 34.2 psu within 0.97 meters (3 feet) of the discharge point.

A worst-case modeled condition used an effluent flow rate of 45.8 gpm and an effluent salinity of 58.7 psu. This case modeled conditions that assumed zero ambient currents (i.e., no advective mixing) and a highly stratified water column due to temperature and density differences. Under this worst-case scenario, the model estimated that the salinity of the brine effluent was reduced to less than 2 percent above the ambient salinity (33.5 psu) within a horizontal distance of 1.88 meters (6 feet) from the diffuser.

This value represented a dilution factor of 37 to 1 (seawater to effluent) as calculated by the model.

Intuitively, it may help to visualize how rapid mixing of brine to near background salinity values is accomplished by the large volume of surrounding seawater. There are approximately 1,755 gallons of seawater in a 1.88 meter cube of seawater and over 264,000 gallons of seawater in a 10 meter cube. Being conservative and assuming no diffuser system a worst-case flow rate of 45.8 gpm is equivalent to 0.76 gallons of brine discharged per second from a single discharge point. Water Board staff has used the 37 to 1 (seawater to effluent) dilution factor to determine the need for water quality based effluent limitations for Discharge Point 001, and where necessary, to calculate those limitations.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

This section of the standardized permit template is not applicable, as the Ocean View Plaza Desalination Facility is a new facility.

D. Compliance Summary

This section of the standardized permit template is not applicable, as the Ocean View Plaza Desalination Facility is a new facility.

E. Planned Changes

The Ocean View Plaza Desalination Facility is a new facility, and changes in operation and/or physical components are not planned.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to the federal Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA, and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to CWC Article 4, Chapter 4, Division 7.

B. California Environmental Quality Act (CEQA)

Pursuant to California Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177. Water Code section 13389 states that neither the State Water Board nor a Regional Water Board must comply with the provisions of CEQA prior to the adoption of waste discharge requirements, except requirements for "new sources" as defined by the federal Clean Water Act. Although the Ocean View Desalination

Facility is a newly constructed plant that has not discharged before, it is not a "new source" as defined by the federal Clean Water Act.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board has adopted *Water Quality Control Plan for the Central Coast Region* (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of very high levels of total dissolved solids (TDS) in the Pacific Ocean, the receiving water meets an exception to Resolution No. 88-63, which precludes waters with TDS levels greater than 3,000 mg/L from the MUN designation.
2. **Thermal Plan.** The State Water Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975.

The Thermal Plan establishes the following water quality objectives for new discharges of elevated temperature wastes to coastal waters.

- a. Elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.
 - b. Elevated temperature wastes shall be discharged a sufficient distance from Areas of Special Biological Significance to assure the maintenance of natural temperatures in these areas.
 - c. The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4° F at (i) the shoreline, (ii) the surface of any ocean substrate, or (iii) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any completed tidal cycle.
3. **California Ocean Plan.** The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005, and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. The Ocean Plan identifies the following beneficial uses of ocean waters of the State.

Table F-2. Receiving Water Beneficial Uses Established by the Ocean Plan

Discharge Point	Receiving Water	Beneficial Uses
001	Pacific Ocean	<ul style="list-style-type: none"> Water Contact and Non-Contact Recreation, including Aesthetic Enjoyment

		<ul style="list-style-type: none"> • Navigation • Commercial and Sport Fishing • Rare and Endangered Species • Marine Habitat • Shellfish Harvesting • Mariculture • Fish Migration • Fish Spawning • Preservation of Designated Areas of Special Biological Significance
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In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. [65 Fed. Reg. 24641 (April 27, 2000), codified at 40 CFR 131.21] Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000 must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
5. **Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that the existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements and incorporates by reference both the State and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.
6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the Clean Water Act (CWA) and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

D. Impaired Water Bodies on CWA 303(d) List

CWA section 303(d) requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Water Board must develop and implement TMDLs (Total Maximum Daily

Loads) that will specify WLAs (Waste Load Allocations) for point sources and LAs (Load Allocations) for non-point sources.

The USEPA partially approved the State's 2006 303(d) list of impaired water bodies on November 30, 2006. This list does not identify Monterey Bay as impaired.

E. Other Plans Policies and Regulations

1. **Discharges of Storm Water.** For the control of storm water discharged from the site of the wastewater treatment and disposal facilities, the Order requires, if applicable, the Discharger to seek authorization to discharge under and meet the requirements of the State Water Resources Control Board's NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44 (a) permits are required to include applicable technology-based limitations and standards, and at 40 CFR 122.44 (d) permits are required to include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44 (d): (1) WQBELs may be established using a calculated water quality criterion derived from a proposed State criterion or an explicit State policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using U.S. EPA criteria guidance published under CWA Section 304 (a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

A. Discharge Prohibitions

1. Discharge Prohibition III. A. (Discharge at a location other than as described by this Order is prohibited.) The Order authorizes a single, specific point of discharge to Monterey Bay, and this prohibition reflects CWA section 402's prohibition against discharges of pollutants except in compliance with the Act's permit requirements, effluent limitations, and other enumerated provisions.
2. Discharge Prohibition III. B. (Discharges of waste or discharges in any manner other than as described by this Order, are prohibited.) Because limitations and conditions of the Order have been prepared based on specific information provided by the Discharger and specific wastes described by the Discharger, the limitations and conditions of the Order do not adequately address waste streams not contemplated during drafting of the Order. To prevent the discharge of such waste

streams that may be inadequately regulated, the Order prohibits the discharge of any waste that was not described by the Regional Water Board during the process of permit issuance.

3. Discharge Prohibition III. C (Discharges in excess of 0.116 MGD and discharges other than reverse osmosis brine or concentrate are prohibited.) Like Discharge Prohibition III. B, this prohibition prohibits discharges not contemplated during drafting of the Order.
4. Discharge Prohibition III. D. (Discharge of any radiological, chemical, or biological warfare agent or high level radioactive waste is prohibited.) This prohibition restates a discharge prohibition established in section III. H of the Ocean Plan.
5. Discharge Prohibition III. E. (Discharge of sludge or sludge digester supernatant to the Ocean or into a waste stream that discharges to the Ocean is prohibited.) This prohibition restates a discharge prohibition established in section III. H of the Ocean Plan.

B. Technology-Based Effluent Limitations

1. Scope and Authority

NPDES regulations at 40 CFR 122.44 (a) require that permits include applicable technology-based limitations and standards. USEPA has not yet developed federal technology-based requirements applicable to this discharge. Where the USEPA has not yet developed technology based standards for a particular industry or a particular pollutant, CWA Section 402 (a) (1) and USEPA regulations at 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit writer must consider specific factors outlined at 40 CFR 125.3.

The State Water Board, in Table A of the Ocean Plan, has also established technology based requirements for conventional pollutants (suspended and settleable matter, oil and grease, turbidity, and pH), which are applicable to the desalination facility as an industrial discharger for which Effluent Limitations Guidelines have not been established.

2. Applicable Technology-Based Effluent Limitations

Technology-based effluent limitations applicable to Discharge Point 001 and established by the Order are summarized as follows. These technology-based effluent limitations are derived from Table A of the Ocean Plan.

Table F-3. Summary of Technology-Based Effluent Limitations - Outfall 001

Parameter	Units	Monthly 30-Day Average	Weekly 7-Day Average	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75
Settleable Solids	mL/L	1.0	1.5	3.0
TSS	mg/L	60 ¹	--	--

Turbidity	NTU	75	100	225
pH	s.u.	Within 6.0 to 9.0 at all times		

Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

NPDES regulations at 40 CFR 122.44 (d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards, including numeric and narrative objectives within a standard.

The process for determining "reasonable potential" for discharges to cause or contribute to an exceedance of a water quality standard and for calculating WQBELs, when necessary, is intended to protect the designated uses of receiving waters as specified in the Basin and Ocean Plans, and achieve applicable water quality objectives and criteria that are contained in the Basin Plan and in other applicable State and federal rules, plans, and policies, including applicable water quality criteria from the Ocean Plan.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established in accordance with the requirements of 40 CFR 122.44 (d) (1) (vi), using (1) USEPA criteria guidance under CWA section 304 (a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

Beneficial uses for ocean waters of the Central Coast Region are established by the Ocean Plan and are described by Section II. (Findings) H of the Order.

Water quality criteria applicable to ocean waters of the Region are also established by the Ocean Plan, which includes water quality objectives for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. The water quality objectives from the Ocean Plan are incorporated as receiving water limitations into this Order. In addition, Table B of the Ocean Plan contains numeric water quality objectives for 83 toxic pollutants for the protection of marine aquatic life and human health.

3. Determining the Need for WQBELs

Procedures for performing a Reasonable Potential Analysis (RPA) for ocean dischargers are described in Section III. C. and Appendix VI of the Ocean Plan. The typical procedure is a statistical method that projects an effluent data set that accounts for long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of an existing effluent data set; and compares the 95th percentile concentration, at a 95 percent confidence level, with the applicable water quality criterion from Table B of the Ocean plan. A finding of reasonable potential results when the 95th percentile concentration exceeds the applicable criterion.

When effluent data is not available, as in the circumstances of the Ocean View Plaza desalination facility, the Regional Water Board may decide that WQBELs are necessary after a review of such information as the facility or discharge type, solids loading, lack of dilution, potential toxic effects, fish tissue data, 303 (d) status of the receiving water, or the presence of threatened or endangered species or their critical habitat, or other information.

Here, the facility will treat uncontaminated seawater by reverse osmosis (RO), producing a potable water product and a concentrated brine that will be discharged to Monterey Bay. Based on information provided by the Discharger (Kennedy/Jenks Consultants, 2006), the RO system is designed to provide a 35 to 45 percent recovery rate (i.e., for every 100 gallons of seawater that is treated, 35 to 45 gallons of product water and 65 to 75 gallons of RO concentrate will be produced). The Water Board has assumed that the system will also operate at a 95 percent rate of rejection (i.e., approximately 95 percent of all dissolved solids in the intake seawater will be concentrated in the RO concentrate stream). The net result will be concentration of dissolved solids by a factor of approximately 1.5 – 2.0 in the RO concentrate. Without actual effluent data and an understanding that naturally occurring dissolved solids from seawater will be concentrated in discharges from the facility, the Water Board concludes that discharges from the facility show a reasonable potential to cause or contribute to exceedances of water quality standards from Table B of the Ocean Plan for metals and chronic toxicity. WQBELs for Table B metals and chronic toxicity are therefore established by the Order.

4. WQBEL Calculations

As described by Section III. C of the Ocean Plan, effluent limits for Table B pollutants are calculated according to the following equation.

$$C_e = C_o + D_m (C_o - C_s)$$

where:

C_e = the effluent limitation ($\mu\text{g/L}$)

- Co = the water quality objective to be met at the completion of initial dilution ($\mu\text{g/L}$)
Cs = background seawater concentration
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

The Dm is based on observed waste flow characteristics, receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure.

In this case, initial dilution will occur when the effluent mixes with the seawater at the point of discharge. An analysis of effluent mixing and dilution for discharge from the facility was conducted by the Permittee using the Environmental Protection Agency's *Visual Plumes* model version 1.01 (Marine Resource Consultants, Inc, 2006). Ten ambient ocean discharge conditions ranging from worst-case to optimal-case based on ambient current speed and thermal stratification were modeled using effluent discharge rates between 45.8 and 85.3 gallons per minute (gpm). Under all modeled conditions, the salinity of the brine effluent was reduced to less than 2 percent above the ambient salinity (33.5 practical salinity units [psu]) within a horizontal distance of 1.88 meters (6 feet) from the diffuser. Under normal operating conditions, with effluent flow rates of 85.3 gpm and an effluent salinity of 47.1 psu, the effluent salinity reaches 34.2 psu within 0.97 meters (3 feet) of the discharge point.

A worst-case modeled condition used an effluent flow rate of 45.8 gpm and an effluent salinity of 58.7 psu. This case modeled conditions that assumed zero ambient currents (i.e., no advective mixing) and a highly stratified water column due to temperature and density differences. Under this worst-case scenario, the model estimated that the salinity of the brine effluent was reduced to less than 2 percent above the ambient salinity (33.5 psu) within a horizontal distance of 1.88 meters (6 feet) from the diffuser. This value represented a dilution factor of 37 to 1 (seawater to effluent) as calculated by the model. Based on this study, Regional Water Board staff has used this dilution factor to calculate WQBELs (i.e., Dm = 37).

As site-specific water quality data are not available for the ambient water, in accordance with Table B implementing procedures, Cs equals zero for all pollutants, except the following:

Table F-4. Background Seawater Concentrations

Pollutant	Background Seawater Concentration
Arsenic	3 $\mu\text{g/L}$
Copper	2 $\mu\text{g/L}$
Mercury	0.0005 $\mu\text{g/L}$
Silver	0.16 $\mu\text{g/L}$
Zinc	8 $\mu\text{g/L}$

Applicable water quality objectives from Table B of the Ocean Plan for the metals and chronic toxicity are as follows.

Table F-5. Ocean Plan Water Quality Objectives

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	µg/L	8	32	80
Cadmium	µg/L	1	4	10
Chromium ¹	µg/L	2	8	20
Copper	µg/L	3	12	30
Lead	µg/L	2	8	20
Mercury	µg/L	0.04	0.16	0.4
Nickel	µg/L	5	20	50
Selenium	µg/L	15	60	150
Silver	µg/L	0.7	2.8	7
Zinc	µg/L	20	80	200
Chronic Toxicity	TUc	---	1	---

Using the equation, $C_e = C_o + D_m (C_o - C_s)$, effluent limitations are calculated to two significant digits as follows:

Arsenic

$$\begin{aligned} C_e &= 8 \mu\text{g/L} + 37 (8 \mu\text{g/L} - 3) = 190 \mu\text{g/L} \text{ (6-Month Median)} \\ C_e &= 32 \mu\text{g/L} + 37 (32 \mu\text{g/L} - 3) = 1,100 \mu\text{g/L} \text{ (Daily Maximum)} \\ C_e &= 80 \mu\text{g/L} + 37 (80 \mu\text{g/L} - 3) = 2,900 \mu\text{g/L} \text{ (Instantaneous Maximum)} \end{aligned}$$

Cadmium

$$\begin{aligned} C_e &= 1 \mu\text{g/L} + 37 (1 \mu\text{g/L} - 0) = 38 \mu\text{g/L} \text{ (6-Month Median)} \\ C_e &= 4 \mu\text{g/L} + 37 (4 \mu\text{g/L} - 0) = 150 \mu\text{g/L} \text{ (Daily Maximum)} \\ C_e &= 10 \mu\text{g/L} + 37 (10 \mu\text{g/L} - 0) = 380 \mu\text{g/L} \text{ (Instantaneous Maximum)} \end{aligned}$$

Chromium

$$\begin{aligned} C_e &= 2 \mu\text{g/L} + 37 (2 \mu\text{g/L} - 0) = 76 \mu\text{g/L} \text{ (6-Month Median)} \\ C_e &= 8 \mu\text{g/L} + 37 (8 \mu\text{g/L} - 0) = 300 \mu\text{g/L} \text{ (Daily Maximum)} \\ C_e &= 20 \mu\text{g/L} + 37 (20 \mu\text{g/L} - 0) = 760 \mu\text{g/L} \text{ (Instantaneous Maximum)} \end{aligned}$$

Copper

$$\begin{aligned} C_e &= 3 \mu\text{g/L} + 37 (3 \mu\text{g/L} - 2) = 40 \mu\text{g/L} \text{ (6-Month Median)} \\ C_e &= 12 \mu\text{g/L} + 37 (12 \mu\text{g/L} - 2) = 380 \mu\text{g/L} \text{ (Daily Maximum)} \\ C_e &= 30 \mu\text{g/L} + 37 (30 \mu\text{g/L} - 2) = 1,100 \mu\text{g/L} \text{ (Instantaneous Maximum)} \end{aligned}$$

Lead

$$\begin{aligned} C_e &= 2 \mu\text{g/L} + 37 (2 \mu\text{g/L} - 0) = 76 \mu\text{g/L} \text{ (6-Month Median)} \\ C_e &= 8 \mu\text{g/L} + 37 (8 \mu\text{g/L} - 0) = 304 \mu\text{g/L} \text{ (Daily Maximum)} \end{aligned}$$

$$Ce = 20 \mu\text{g/L} + 37 (20 \mu\text{g/L} - 0) = 760 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Mercury

$$Ce = 0.04 \mu\text{g/L} + 37 (0.04 \mu\text{g/L} - 0.005) = 1.3 \mu\text{g/L} \text{ (6-Month Median)}$$

$$Ce = 0.16 \mu\text{g/L} + 37 (0.16 \mu\text{g/L} - 0.005) = 5.9 \mu\text{g/L} \text{ (Daily Maximum)}$$

$$Ce = 0.4 \mu\text{g/L} + 37 (0.4 \mu\text{g/L} - 0.005) = 15 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Nickel

$$Ce = 5 \mu\text{g/L} + 37 (5 \mu\text{g/L} - 0) = 190 \mu\text{g/L} \text{ (6-Month Median)}$$

$$Ce = 20 \mu\text{g/L} + 37 (20 \mu\text{g/L} - 0) = 760 \mu\text{g/L} \text{ (Daily Maximum)}$$

$$Ce = 50 \mu\text{g/L} + 37 (50 \mu\text{g/L} - 0) = 1,900 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Selenium

$$Ce = 15 \mu\text{g/L} + 37 (15 \mu\text{g/L} - 0) = 570 \mu\text{g/L} \text{ (6-Month Median)}$$

$$Ce = 60 \mu\text{g/L} + 37 (60 \mu\text{g/L} - 0) = 2,300 \mu\text{g/L} \text{ (Daily Maximum)}$$

$$Ce = 150 \mu\text{g/L} + 37 (150 \mu\text{g/L} - 0) = 5,700 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Silver

$$Ce = 0.7 \mu\text{g/L} + 37 (0.7 \mu\text{g/L} - 0.16) = 21 \mu\text{g/L} \text{ (6-Month Median)}$$

$$Ce = 2.8 \mu\text{g/L} + 37 (2.8 \mu\text{g/L} - 0.16) = 100 \mu\text{g/L} \text{ (Daily Maximum)}$$

$$Ce = 7 \mu\text{g/L} + 37 (7 \mu\text{g/L} - 0.16) = 260 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Zinc

$$Ce = 20 \mu\text{g/L} + 37 (20 \mu\text{g/L} - 8) = 460 \mu\text{g/L} \text{ (6-Month Median)}$$

$$Ce = 80 \mu\text{g/L} + 37 (80 \mu\text{g/L} - 8) = 2,700 \mu\text{g/L} \text{ (Daily Maximum)}$$

$$Ce = 200 \mu\text{g/L} + 37 (200 \mu\text{g/L} - 8) = 7,300 \mu\text{g/L} \text{ (Instantaneous Maximum)}$$

Chronic Toxicity

$$Ce = 1 \text{ TUc} + 37 (\text{TUc} - 0) = 38 \text{ TUc} \text{ (Daily Maximum)}$$

Implementing provisions at Section III. C of the Ocean Plan require that, in addition to concentration-based limits, effluent limitations for Table B pollutants be expressed in terms of mass. Therefore, the Order includes mass-based limits for arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc which are based on a flow of 0.12 MGD.

Table F-6. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations		
		6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	$\mu\text{g/L}$	190	1,100	2,900
Cadmium	$\mu\text{g/L}$	38	150	380
Chromium ¹	$\mu\text{g/L}$	76	300	760

Parameter	Units	Effluent Limitations		
		6-Month Median	Daily Maximum	Instantaneous Maximum
Copper	µg/L	40	380	1,100
Lead	µg/L	76	300	760
Mercury	µg/L	1.3	5.9	15
Nickel	µg/L	190	760	1,900
Selenium	µg/L	570	2,300	5,700
Silver	µg/L	21	100	260
Zinc	µg/L	460	2,700	7,300
Chronic Toxicity	TUc	--	38	--

¹ The Discharger may meet this limitation as a hexavalent chromium or as a total chromium limitation.

7. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

Implementing provisions of section III. C of the Ocean Plan express a preference for chronic toxicity limitations, when the minimum initial dilution of a discharge is less than 100:1 and therefore, the Water Board is establishing effluent limitations for chronic, not acute, whole effluent toxicity for the Ocean View Plaza Desalination Facility.

C. Final Effluent Limitations

Final, technology-based and water quality-based effluent limitations established by the Order are discussed in sections IV.B. and IV.C of this fact sheet.

1. Satisfaction of Anti-Backsliding Requirements

The Order establishes effluent limitations for a new discharger; therefore, CWA anti-backsliding requirements are not applicable.

2. Satisfaction of Antidegradation Policy

Provisions of the Order are consistent with applicable anti-degradation policy expressed by NPDES regulations at 40 CFR 131.12 and by State Water Board Resolution No. 68-16. Limitations and conditions of the Order ensure maintenance of the existing quality of receiving waters.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on suspended and settleable solids, oil and grease, turbidity, and pH. Restrictions on these pollutants are discussed in section IV. B of this Fact Sheet.

D. Interim Effluent Limitations

The Order does not establish interim effluent limitations and schedules for compliance with final limitations. Interim limitations are authorized only in certain circumstances, when immediate compliance with newly established final water quality based limitations is not feasible. Interim effluent limitations are not authorized for WQBELs, which are based on water quality criteria of the Ocean Plan.

E. Land Discharge Specifications

This section of the standardized permit is not applicable.

F. Reclamation Specifications

This section of the standardized permit is not applicable.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water quality is a result of many factors, some unrelated to the discharge. This Order considers these factors and is designed to minimize the influence of the discharge on the receiving water. Receiving water limitations within the proposed Order reflect all applicable, general water quality objectives of the Ocean Plan for ocean waters of the State.

B. Groundwater

This section of the standardized permit template is not applicable.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

NPDES regulations at 40 CFR 122.48 require all NPDES permits to specify recording and reporting of monitoring results. CWC sections 13267 and 13383 authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. Following is the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Because intake water to the desalination facility is sea water from Monterey Bay, influent monitoring requirements are not established by the Order.

B. Effluent Monitoring

Effluent monitoring is required for all pollutants and pollutant parameters which have effluent limitations established in section IV. A of the Order.

Monitoring for the Ocean Plan Table B metals is required, initially, on a quarterly basis to determine compliance with effluent limitations and to characterize discharges from the desalination facility. This monitoring frequency can be reduced for those metals which are consistently present in the discharge at concentrations below their respective water quality criteria.

Pursuant to guidance established in Appendix III of the Ocean Plan for facilities that discharge less than 1 MGD, monitoring for all Table B pollutants is required one time in the permit term. Such monitoring will provide more complete characterization of the discharge and will allow sufficient data collection to conduct a reasonable potential analysis in the future.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. Section III. C. 3. c.(4) of the Ocean Plan requires dischargers to conduct chronic toxicity testing if the minimum initial dilution of the effluent is below 100:1. This Order includes annual monitoring requirements for chronic toxicity in the MRP (Attachment E) as specified in the Ocean Plan.

Chronic toxicity is to be calculated using the following formula:

$$TU_c = \frac{100}{NOEL}$$

Where: No Observed Effect Level (NOEL) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test as listed in Appendix II of the Ocean Plan.

D. Receiving Water Monitoring

1. Surface Water

The Discharger shall monitor bottom salinity at various distances (e.g. 1 m and 10 m) upstream and downstream (approximately 135 and 315 feet) from the diffuser system on at least a quarterly basis for the first year.

2. Groundwater

This section of the standardized permit template is not applicable.

E. Other Monitoring Requirements

This section of the standardized permit template is not applicable.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

NPDES regulations at 40 CFR 122.41 (a) (1) and (b - n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25 (a) (12) allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41 (j) (5) and (k) (2), because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387 (e).

B. Special Provisions

1. Reopener Provisions

These provisions are based on 40 CFR Part 123. The Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new federal regulations, modification in toxicity requirements, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

The Order requires the facility to maintain a Toxicity Reduction Work Plan. When toxicity monitoring measures chronic toxicity above the effluent limitation established by the Order, the Discharger is required to resample and retest. When all monitoring results are available, the Executive Officer can determine whether to initiate enforcement action, whether to require the Discharger to implement toxicity reduction evaluation (TRE) requirements, or whether other measures are warranted.

3. Best Management Practices and Pollution Prevention

This subsection includes requirements for Best Management Practices to control the discharge of pollutants when numeric limitations are infeasible or for storm

water discharges associated with industrial activity. Therefore, this section of the standardized permit template is not applicable. Best Management Practices applicable to construction activities will be described separately under the General Construction Storm Water Permit. Likewise, separate permits (General Industrial Storm Water Permit and General Municipal Storm Water Permit) will address Best Management Practices applicable to the operation and design of the facility.

4. Construction, Operation, and Maintenance Specifications

This section of the standardized permit template is not applicable.

5. Other Special Provisions

a. Discharges of Storm Water

The Order does not address discharges of storm water from the desalination facility, except to require coverage by and compliance with applicable provisions of General Permit No. CAS000001 - *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities*.

6. Compliance Schedules

The Order does not establish interim effluent limitations and schedules of compliance with final limitations.

VIII. PUBLIC PARTICIPATION

The Central Coast Regional Water Quality Control Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Ocean View Plaza Desalination Facility facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following **<Describe Notification Process (e.g., newspaper name and date)>**

B. Written Comments

Regional Water Board staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

Written comments must be received at the Regional Water Board offices by 5:00 p.m. on May 18, 2007, or as otherwise provided in a hearing notice for this Order.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **July 6, 2007**
Time: **8:30 a.m.**
Location: **Watsonville City Council Chambers**
250 Main Street
Watsonville, CA 95076

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/centralcoast/> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (805) 549-3147.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Peter von Langen at (805) 549-3688 or PvonLangen@waterboards.ca.gov.